



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

**ON A BELT OF SERPENTINE AND STEATITE IN RADNOR TOWNSHIP,
DELAWARE COUNTY, PA.**

BY THEO. D. RAND.

There is a well-known belt of serpentine passing through Radnor Township, in a direction about N. 80° E. from near Radnor Station, P. R. R., continuing probably to West Chester, S. 75° W., and which is probably identical with that apparent at the Schuylkill at Rose's quarry, nearly opposite Lafayette Station, P. G. & N. R. R.

This serpentine is very dark, and is almost without other minerals except asbestos. Northwest of this is another belt, which I believe has never before been described.

Its southeasternmost outcrop is on the S. W. side of the gulf road, about 150 yards S. E. of the road from Radnor Station to Conshohocken, and in, but near the southeastern border of, the Edge Hill hydro-mica schists, which a quarter of a mile N. W. form the Gulf Hills, the continuation of which is known as the South (Chester) Valley Hill. Its outcrop is a very small one, not over six or eight feet in width, and has been exposed by a cutting of the road.

The serpentine is of a reddish- and also of a blackish-green color, quite compact. No other minerals are visible.

About a mile, S. 73° W., from this point, a similar serpentine appears, ploughed up in a field on the property of the heirs of Mark Brooke. This point is about five-eighths of a mile nearly N. E. from Radnor Station, and about a quarter of a mile N. N. W. from the well-known serpentine belt.

At this point it is accompanied by a bed of steatite, indeed nearly pure talc. On both sides occur the primal sandstone rocks of Rogers. This observation, however, is made, except as to one outcrop of steatite, on surface specimens ploughed up, but the beds are so well defined and the rocks so abundant that I believe it is accurate, and it is confirmed by another exposure hereafter mentioned.

The accompanying minerals are chlorite and a foliated chloritic mineral, and on the N. E. a garnetiferous schist. This garnetiferous schist is found apparently southwest of the steatite, on the

road from Radnor Station to Conshohocken, N. E. of the road separating Delaware from Montgomery County. The steatite, with two distinct parallel outcrops, with primal sandstone between, appears near the same road in a ploughed field, but only as loose masses, on a farm formerly owned by Christopher Pechin; no serpentine was found.

These two exposures of the steatite are about half a mile apart, and the direction is nearly N. 70° E.

The serpentine on the gulf road is very nearly in the same direction, and although no steatite was found on the gulf road, except one small piece, I was assured by Mr. Garrett Williamson, who has resided in the neighborhood for years, and who first called my attention to the fact that steatite existed in the vicinity, that steatite had been found in place in digging the gutters of the road, about one hundred yards southeast of the serpentine, and on searching at this point the small specimen mentioned was found.

The continuation of the line was followed, but no other exposure was seen. The strike is nearly the same as that of the Edge Hill rocks, the trap, the primal slates, and the Gulf Valley; varying about 18° from that of the steatite of the soapstone quarry, from Chestnut Hill to the black rocks near Merion Square, and its probable continuation from Rosemont southwestwardly.

The question at once suggests itself: Is this steatite of the soapstone belt on the northeasterly side of an anticlinal axis? The presence of the garnetiferous mica schist favors this view, but the occurrence on the gulf road on the Edge Hill rocks, and the presence on the northeast of the primal slates are opposed to it. I desire at present merely to put the facts upon record, hoping that future discoveries may render them of value towards development of the geology of the region.

The line of strike of this belt would be just at the brow of the hill on the southwest side of the Schuylkill, overlooking Conshohocken. Granitoid gneissic rocks are there in abundant outcrops, but no serpentine or steatite has been noticed.

I desire also to call attention to a fact which probably indicates a line of fault in the upper part of the valley of Mill Creek. The steatite belt of the soapstone quarries is found in a very nearly perfect line, about S. 54° W. from Chestnut Hill, Philadelphia, to near Merion Square, Montgomery County, where it is very

prominent in the so-called black rocks. It continues, however, in the same direction at least half a mile further, being exposed in the Black Rock Road at the curve in that road N. E. of Mr. Chas. Wheeler's, beyond which it does not appear. The prolongation of this bearing would strike the Penna. R. R. at or near the bridge by which the Black Rock Road crosses it. The railroad cutting is here some thirty feet deep for over half a mile in decomposed mica schist, without a trace of steatite, but at Rosemont, a distance, measured at right angles to the strike, of about half a mile, and in direction due west, it again appears, northeast of the railroad. Near Darby Creek, about two and a half miles S. 55° W. are other outcrops, the course being S. 55° W., beyond which it widens into a broad belt of serpentine and allied rocks to the West Chester road, identified by the pseudomorphs of serpentine after staurolite, the so-called bastard serpentine.

Blue Hill, Providence Township, is nearly in the prolongation of this line, as also Walter Green's in Marple.

The serpentine belt first mentioned has a similar change in direction; from Rose's quarry to a point on the Barr farm, two miles north from Bryn Mawr, its direction is about N. 65° E., a prolongation striking the Pennsylvania Railroad at a point half a mile above Rosemont, whereas, at its first outcrop near Radnor Station, it is about half a mile north of this assumed line, and thence pursues a course about S. 75° or 80° W. The outcrop is about half a mile in length. Both terminations are abrupt, and, in situations in which, if continuous, its continuation should be plainly visible.